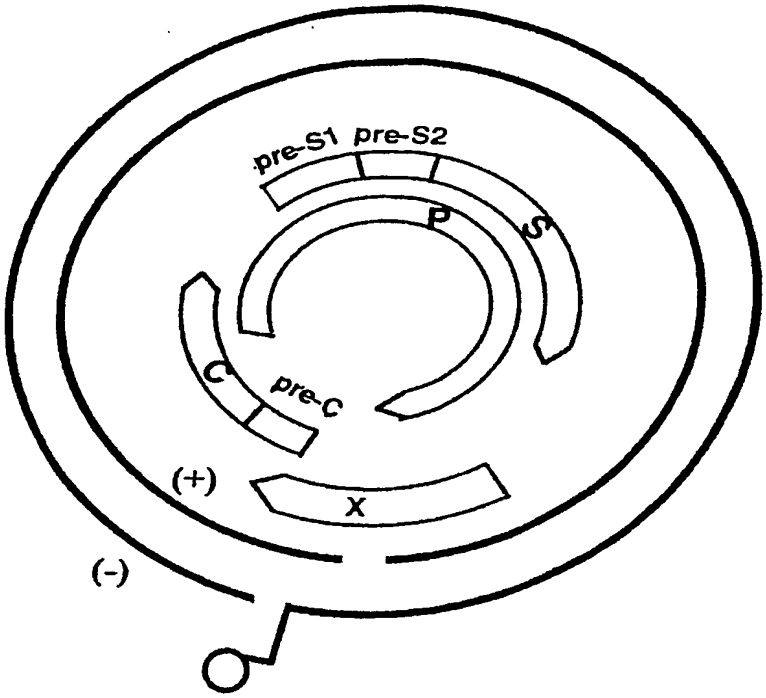

Figure 1

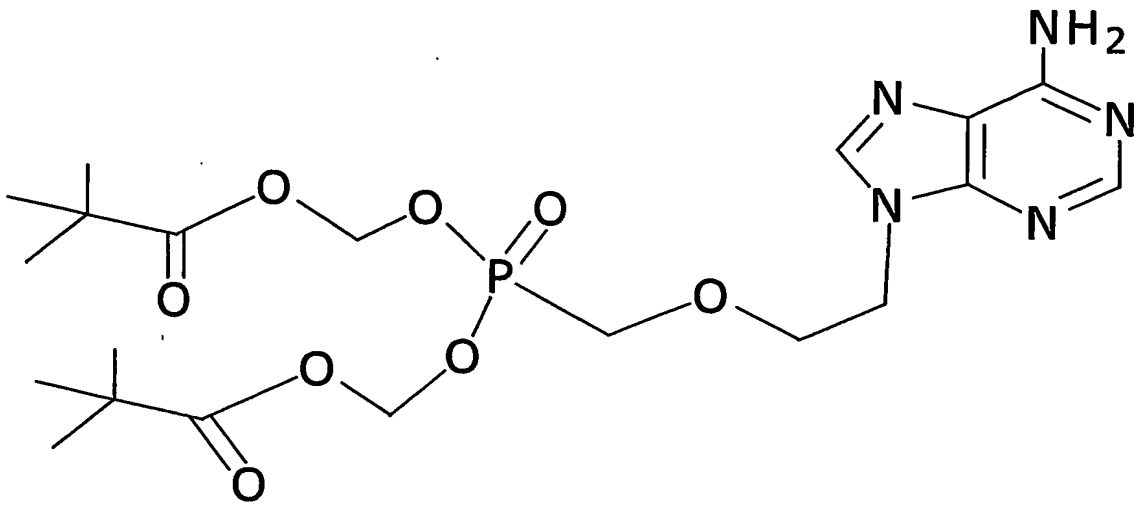

Figure 2

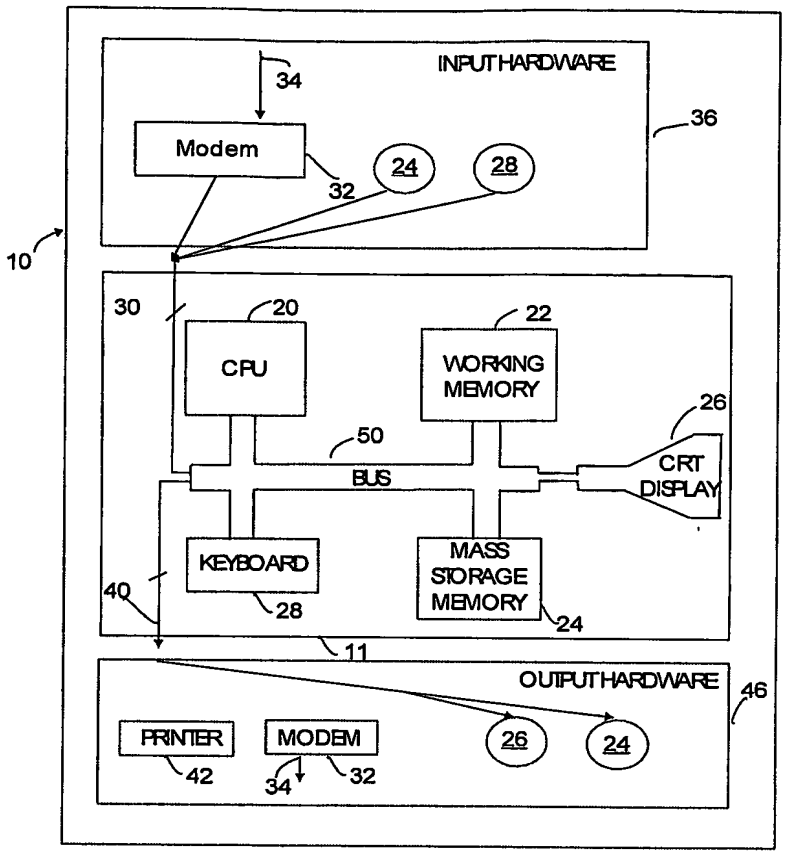
INPUT HARDWARE
34
36
Modem
32
24
28
10
30
20
CPU
22
WORKING MEMORY
26
50
BUS
CRT DISPLAY
KEYBOARD
28
MASS STORAGE MEMORY
24
40
11
OUTPUT HARDWARE
46
PRINTER
42
MODEM
34
32
26
24

Figure 3A

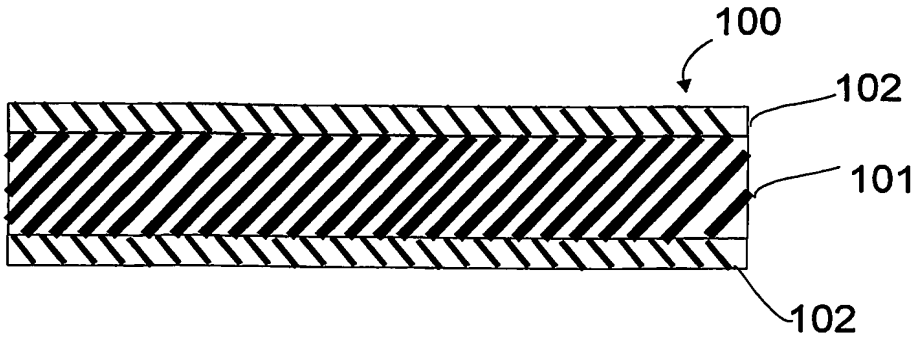

Figure 3B

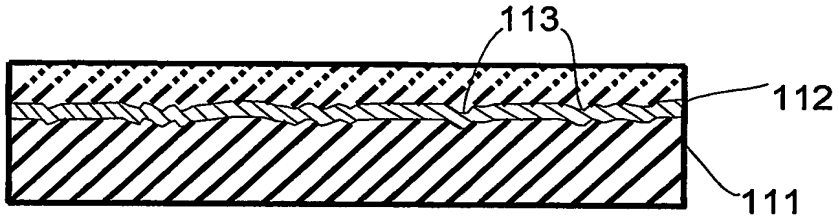

Figure 3C

Figure 4: Patient A nt sequence

```
          10         20         30         40         50
GCTTCCACCAATCGGCAGGCAGGAAGACAGCCTACTCCCATCTCTCCACC

          60         70         80         90        100
TCTAAGAGACAGTCATCCTCAGGCCATGCAGTGGAACTCCAGCACATTCC

         110        120        130        140        150
ACCATGCTCTGCTAGATCCCAGACCTGCTGGTGGCTCCAGTTCCGGAACA

         160        170        180        190        200
GTAAACCCTGTTCCGACTACTGCCTCTCCCATATCGTCAATCTTCTCGAG

         210        220        230        240        250
GACTGGGGACCCTGCGCCGAATATGGAGAGCACCACATCAGGATTCCTAG

         260        270        280        290        300
GACCCCTGCTCGTGTTACAGGCGGGGTTTTTCTTGTTGACAAGAATCCTC

         310        320        330        340        350
ACAATACCAAAGAGTCTAGACTCGTGGTGGACTTCTCTCAATTTTCTAGG

         360        370        380        390        400
GGGAGCACCCACGTGTCCTGGCCAAAATTTGCAGTCCCCAACCTCCAATC

         410        420        430        440        450
ACTCACCAACCTCTTGTCCTCCAATTTGTCCTGGTTATCGCTGGATGTGT

         460        470        480        490        500
CTGCGGCGTTTTATCATCTTCCTCTTCATCCTGCTGCTATGCCTCATCTT

         510        520        530        540        550
CTTGTTGGTTCTTCTGGACTACCAAGGTATGTTGCCCGTTTGTCCTCTAC

         560        570        580        590        600
TTCCAGGAACATCAACTACCAGCACGGGACCATGCAAGACCTGCACGACT

         610        620        630        640        650
CCTGCTCAAGGAACCTCTATGTTTCCCTCTTGTTGCTGTACAAAACCTTC

         660        670        680        690        700
GGACGGAAATTGCACTTGTATTCCCATCCCATCATCTTGGGCTTTCGTAA

         710        720        730        740        750
GATTCCTATGGGAGTGGGCCTCAGTCCGTTTCTCCTGGTTCAGTTTACTA

         760        770        780        790        800
GTGCCATTTGTTCAGTGGTTCGTAGGGCTTTCCCCCACTGTTTGGCTTTC

         810        820        830        840        850
```

AGTTATATGGATGATGTGGTATTGGGGGCCAAGTCTGTACAACATCTTGA

860 870 880 890 900
ATCCCTTTATACCGCTATTACCAATTTTCTTTTGTCTTTGGGTATACATT

910 920 930 940 950
TAAACCCTAATAAAACCAAGCGTTGGGGCTACTCCCTTAACTTCATGGGA

960 970 980 990 1000
TATGTAATTGGAAGTTGGGGTACCTTGCCACAGGAACATATTGTACAAAA

AATCAAA

Figure 4

Figure 5: Patient A. HBV Polymerase sequence

```
         10        20        30        40        50
EDWGPCAEYGEHHIRIPRTPARVTGGVFLVDKNPHNTKESRLVVDFSQFS

         60        70        80        90        100
RGSTHVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPH

        110       120       130       140       150
LLVGSSGLPRYVARLSSTSRNINYQHGTMQDLHDSCSRNLYVSLLLLYKT

        160       170       180       190       200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLLVQFTSAICSVVRRAFPHCLA

        210       220       230       240       250
FSYMDDVVLGAKSVQHLESLYTAITNFLLSLGIHLNPNKTKRWGYSLNFM

        260       270
GYVIGSWGTLPQEHIVQKIK
```

Figure 5

Figure 6: Patient A HBV HbsAg sequence

```
         10         20         30         40         50
MESTTSGFLGPLLVLQAGFFLLTRILTIPKSLDSWWTSLNFLGGAPTCPG

         60         70         80         90        100
QNLQSPTSNHSPTSCPPICPGYRWMCLRRFIIFLFILLLCLIFLLVLLDY

        110        120        130        140        150
QGMLPVCPLLPGTSTTSTGPCKTCTTPAQGTSMFPSCCCTKPSDGNCTCI

        160        170        180        190        200
PIPSSWAFVRFLWEWASVRFSWFSLLVPFVQWFVGLSPTVWLSVIWMMWY

        210        220
WGPSLYNILNPFIPLLPIFFCLWVYI
```

Figure 6

Figure 7: Patient B HBV NT sequence

```
         10         20         30         40         50
TCTGTCTCCACCTTTGAGAGACACTCATCCTCAGGCCATGCAGTGGAACT

         60         70         80         90        100
CCACAACCTTCCACCAAACTCTGCAAGATCCCAGAGTGAGAGGCCTGTAT

        110        120        130        140        150
TTCCCTGCTGGTGGCTCCAGTTCAGGAACAGTAAACCCTGTTCCGACTTC

        160        170        180        190        200
TGTCTCTCACACATCGTCAATCTTCTCGAGGATTGGGGTCCCTGCGCTGA

        210        220        230        240        250
ACATGGAGAACATCACATCAGGATTCCTAGGACCCCTGCTCGTGTTACAG

        260        270        280        290        300
GCGGGGTTTTTCTTGTTGACAAGAATCCTCACAATACCGCAGAGTCTAGA

        310        320        330        340        350
CTCGTGGTGGACTTCTCTCAATTTTCTAGGGGGAACTACCGTGTGTCTTG

        360        370        380        390        400
GCCAAAATTCGCAGTCCCCAACCTCCAATCACTCACCAACCTCCTGTCCT

        410        420        430        440        450
CCAACTTGTCCTGGTTATCGCTGGATGTATCTGCGGCGTTTTATCATCTT

        460        470        480        490        500
CCTCTTCATCCTGCTGCTATGCCTCATCTTCTTGTTGGTTCTTCTGGACT

        510        520        530        540        550
ATCAAGGTATGTTGCCCGTTTGTCCTCTAATTCCAGGATCTTCAACCACC

        560        570        580        590        600
AGCACGGGACCATGCAGAACCTGCACGACTCCTGCTCAAGGAAACTCTAT

        610        620        630        640        650
GTATCCCTCCTGTTGCTGTACCAAACCTTCGGACGGAAATTGCACCTGTA

        660        670        680        690        700
TTCCCATCCCATCATCCTGGGCTTTCGGAAAATTCCTATGGGAGTGGGCC

        710        720        730        740        750
TCAGCCCGTTTCTCCTGGCTCAGTTTACTAGTGCCATTTGTTCAGTGGTT
```

Figure 7

```
       760        770        780        790        800
CGTAGGGCTTTCCCCCACTGTTTGGCTTTCAGTTATATGGATGATGTGGT

       810        820        830        840        850
ATTGGGGGCCAAGTCTGTATCGCATCTTGAGTCCCTTTTTACCGCTGTTA

       860        870        880        890        900
CCAATTTTCTTTTGTCTTTGGGTATACATTTAAACCCTCACAAAACAAAA

       910        920        930        940        950
AGATGGGGTCACTCTTTACATTTCATGGGCTATGTCATTGGATGTTATGG

       960        970        980
GTCATTGCCACAAGATCACATCAGACAGAAAA
```

Figure 7 continued

Figure 8: Patient B POLYMERASE sequence

```
         10         20         30         40         50
EDWGPCAEHGEHHIRIPRTPARVTGGVFLVDKNPHNTAESRLVVDFSQFS

         60         70         80         90        100
RGNYRVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPH

        110        120        130        140        150
LLVGSSGLSRYVARLSSNSRIFNHQHGTMQNLHDSCSRKLYVSLLLLYQT

        160        170        180        190        200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLLAQFTSAICSVVRRAFPHCLA

        210        220        230        240        250
FSYMDDVVLGAKSVSHLESLFTAVTNFLLSLGIHLNPHKTKRWGHSLHFM

        260
GYVIGCYGSLPQDHIRQK
```

Figure 8

Figure 9:Patient B HBsAG sequence

```
         10         20         30         40         50
MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGTTVCLG

         60         70         80         90        100
QNSQSPTSNHSPTSCPPTCPGYRWMYLRRFIIFLFILLLCLIFLLVLLDY

        110        120        130        140        150
QGMLPVCPLIPGSSTTSTGPCRTCTTPAQGNSMYPSCCCTKPSDGNCTCI

        160        170        180        190        200
PIPSSWAFGKFLWEWASARFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWY

        210        220
WGPSLYRILSPFLPLLPIFFCLWVYI
```

Figure 9

Figure 10: Patient C HBV NT sequence

```
          10         20         30         40         50
CAGCAGCGCCTCCTCCTGCCTCCTCCAATCGGCAGTCAGGAAGACAGCCT

          60         70         80         90        100
ACTCCCATCTCTCCACCTCTAAGAGACAGTCATCCTCAGGCCATGCAGTG

         110        120        130        140        150
GAACTCCAGCACATTCCACCAAGCTCTGCTAGATCCCAGAGTGAGGGGCC

         160        170        180        190        200
TATATTTTCCTGCTGGTGGCTCCAGTTCCGGAACAGTAAACCCTGTTCCG

         210        220        230        240        250
ACTACTGCCTCTCCCATATCGTCAATCTTCTCGAGGACTGGGGACCCTGC

         260        270        280        290        300
ACCGAACATGGAGAGCACCACATCAGGATTCCTAGGACCCCTGCTCGCGT

         310        320        330        340        350
TACAGGCGGGGTTTTTCTTGTTGACAAGAATCCTCACAATACCACAGAGT

         360        370        380        390        400
CTAGACTCGTGGTGGACTTCTCTCAATTTTCTAGGGGGAACACCCAAGTG

         410        420        430        440        450
TCCTGGCCAAAATTTGCAGTCCCCAACCTCCAATCACTCACCAACCTCTT

         460        470        480        490        500
GTCCTCCAATTTGTCCTGGTTATCGCTGGATGTGTCTGCGGCGTTTTATC

         510        520        530        540        550
ATCTTCCTCTTCATCCTGCTGCTATGCCTCATCTTCTTGTGGGGTCTTCT

         560        570        580        590        600
GGACTACCAAGGTATGTTGCCCGTTTGTCCTCTACTTCCAGGAACATCAA

         610        620        630        640        650
CTACCAGCACGGGACCATGCAAGACCTGCACGACTCCTGCTCAAGGAACC

         660        670        680        690        700
TCTATGTTTCCCTCTTGTTGCTGTACAAAACCTTCGGACGGAAATTGCAC
```

Figure 10

```
        710        720        730        740        750
TTGTATTCCCATCCCATCATCTTGGGCTTTCGCAAGATTCCTATGGGAGT

        760        770        780        790        800
GGGCCTCAGTCCGTTTCTCCTGGCTCAGTTTACTAGTGCCATTTGTTCAG

        810        820        830        840        850
TGGTTCGTAGGGCTTTCCCCCACTGTTTGGCTTTTAGTTATATGGATGAT

        860        870        880        890        900
GTGGTATTGGGGGCCAAGTCTGTACAACAYCTTGAATCCCTTTTTACCGC

        910        920        930        940        950
TGTTACCAATTTTCTTTTGTCTTTGGGTATACATTTAAACCCTACTAAAA

        960        970        980        990       1000
CCAAACGTTGGGGCTACTCCCTTAACTTCATGGGATATGTAATTGGAAGT

       1010       1020       1030       1040
TGGGGTACCTTACCACAAGAACATATTGTACACAAAATCAGACAA
```

Figure 10 continued

Figure 11: Patient C Polymerase sequence

```
         10         20         30         40         50
EDWGPCTEHGEHHIRIPRTPARVTGGVFLVDKNPHNTTESRLVVDFSQFS

         60         70         80         90        100
RGNTQVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPH

        110        120        130        140        150
LLVGSSGLPRYVARLSSTSRNINYQHGTMQDLHDSCSRNLYVSLLLLYKT

        160        170        180        190        200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLLAQFTSAICSVVRRAFPHCLA

        210        220        230        240        250
FSYMDDVVLGAKSVQHLESLFTAVTNFLLSLGIHLNPTKTKRWGYSLNFM

        260        270
GYVIGSWGTLPQEHIVHKIRQ
```

Figure 11

Figure 12 Patient C HbsAg sequence

```
          10         20         30         40         50
MESTTSGFLGPLLALQAGFFLLTRILTIPQSLDSWWTSLNFLGGTPKCPG

          60         70         80         90         100
QNLQSPTSNHSPTSCPPICPGYRWMCLRRFIIFLFILLLCLIFLWGLLDY

      110        120        130        140        150
QGMLPVCPLLPGTSTTSTGPCKTCTTPAQGTSMFPSCCCTKPSDGNCTCI

       160        170        180        190        200
PIPSSWAFARFLWEWASVRFSWLSLLVPFVQWFVGLSPTVWLLVIWMMWY

       210        220
WGPSLYNXLNPFLPLLPIFFCLWVYI
```

Figure 12

Figure 13; Patient D NT sequence

```
         10         20         30         40         50
CTCCTGCATCTACCAATCGGCAGTCAGGAAGACAGCCTACTCCCATCTCT

         60         70         80         90        100
CCACCTCTAAGAGACAGTCATCCTCAGGCCATGCAGTGGAACTCCACAAC

        110        120        130        140        150
TTTCCACCAAGCTCTGCTAGATCCCCGAGTGAGGGGCCTCTATTTTCCTG

        160        170        180        190        200
CTGGTGGCTCCAGTTCCGGGACAGTAAACCCTGTTCCGACTACTGCCTCT

        210        220        230        240        250
CCCATATCGTCAATCTTCTCGAGGACTGGGGACCCTGCACTGAACATGGA

        260        270        280        290        300
GAGCACAACATCAGGATTCCTAGGACCCCTGCTCGTGTTACAGGCGGTGT

        310        320        330        340        350
TTTTCTTGTTGACAAGAATCCTCACAATACCACAGAGTCTAGACTCGTGG

        360        370        380        390        400
TGGACTTCTCTCAATTTTCTAGGGGAAGCACCCGCGTGTCCTGGCCAAAA

        410        420        430        440        450
TTCGCAGTCCCCAACCTCCAATCACTCACCAACCTCTTGTCCTCCAATTT

        460        470        480        490        500
GTCCTGGCTATCGCTGGATGTGTCTGCGGCGTTTTATCATCTTCCTCTTC

        510        520        530        540        550
ATCCTGCTGCTATGCCTCATCTTCTTGTTGGTTCTTCTGGATTACCAAGG

        560        570        580        590        600
TATGTTGCCCGTTTGTCCTCTACTTCCAGGAACGTCAACTACCAGCACGG

        610        620        630        640        650
GACCATGCAAGACCTGCACGATTCCTGCTCAAGGAACCTCTATGTTTCCC

        660        670        680        690        700
TCATGTTGCTGTACAAAACCTTCGGACGGAAACTGCACTTGTATTCCCAT

        710        720        730        740        750
CCCATCATCCTGGGCTTTCGCAAGATTCCTATGGGAGTGGGCCTCAGTCC
```

Figure 13

```
       760        770        780        790        800
GTTTCTCTTGACTCAGTTTACTAGTGCCATTTGTTCAGTGGTTCGTAGGG

       810        820        830        840        850
CTTTCCCCCACTGTTTGGCTTTCAGTTATATGGATGATGTGGTATTGGGG

       860        870        880        890        900
GCCAAGTCTGTACAACATCTTGAGTCCCTTTATACCGCTATTACCAATTT

       910        920        930        940        950
TCTTTTGTCTTTGGGTATACATTTAAACCCTAATAAAACCAAGCGATGGG

       960        970        980        990       1000
GTTACTCCCTTAACTTCATGGGATATGTCATTGGAAGTTGGGGGACTTTA

      1010       1020
CCACAGGAACATATTGTGCTC
```

Figure 13 continued

Figure 14: patient D HBV POL sequence

```
          10         20         30         40         50
EDWGPCTEHGEHNIRIPRTPARVTGGVFLVDKNPHNTTESRLVVDFSQFS

          60         70         80         90         100
RGSTRVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPH

         110        120        130        140        150
LLVGSSGLPRYVARLSSTSRNVNYQHGTMQDLHDSCSRNLYVSLMLLYKT

         160        170        180        190        200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLLTQFTSAICSVVRRAFPHCLA

         210        220        230        240        250
FSYMDDVVLGAKSVQHLESLYTAITNFLLSLGIHLNPNKTKRWGYSLNFM

         260
GYVIGSWGTLPQEHIVL
```

Figure 14

Figure 15 Patient D HBsAg sequence

```
          10         20         30         40         50
MESTTSGFLGPLLVLQAVFFLLTRILTIPQSLDSWWTSLNFLGEAPACPG

          60         70         80         90        100
QNSQSPTSNHSPTSCPPICPGYRWMCLRRFIIFLFILLLCLIFLLVLLDY

         110        120        130        140        150
QGMLPVCPLLPGTSTTSTGPCKTCTIPAQGTSMFPSCCCTKPSDGNCTCI

         160        170        180        190        200
PIPSSWAFARFLWEWASVRFS*LSLLVPFVQWFVGLSPTVWLSVIWMMWY

         210        220
WGPSLYNILSPFIPLLPIFFCLWVYI
```

Figure 15

Figure 16: Patient E HBV nt sequence

```
        10         20         30         40         50
AGTCATCCTCAGGCCATGCAGTGGAACTCCAGCACATTCCACCAAGCTCT

        60         70         80         90        100
GCTAGATCCCAGAGTGAGGGGCCTATACTTTCCTGCTGGTGGCTCCAGTT

       110        120        130        140        150
CAGGAACAGTAAACCCTGTTCCGACTACTGCCTCTCCCATATCGTCAATC

       160        170        180        190        200
TTCTCGAGGACTGGGGACCCTGCACCGAATATGGAGAGCACCACATCAGG

       210        220        230        240        250
ATTCCTAGGACCCCTGCTCGTGTTACAGGCGGGGTTTTTCTTGTTGACAA

       260        270        280        290        300
GAATCCTCACAATACCACAGAGTCTAGACTCGTGGTGGACTTCTCTCAAT

       310        320        330        340        350
TTTCTAGGGGGAGCACCCGCGTGTCCTGGCCAAAATTTGCAGTCCCCAAC

       360        370        380        390        400
CTCCAATCACTCACTAACCTCTTGTCCTCCAATTTGTCCTGGTTATCGCT

       410        420        430        440        450
GGATGTGTCTGCGGCGTTTTATCATCTTCCTCTTCATCCTGCTGCTATGC

       460        470        480        490        500
CTCATCTTCTTGTTGGTTCTTCTGGACTACCAAGGTATGTTGCCCGTTTG

       510        520        530        540        550
TCCTCTACTTCCAGGAACATCAACTACCAGCACGGGACCATGCAAGACCT

       560        570        580        590        600
GCACGACTCCTGCTCAAGGAACCTCTATGTTTCCCTCTTGTTGTTGTACA

       610        620        630        640        650
AAACCTTCGGACGGAAATTGCACTTGTATTCCCATCCCATCATCTTGGGC

       660        670        680        690        700
TTTCGCAAGATTCCTATGGGAGTGGGCCTCAGTCCGTTTCTCATGGCTCA
```

Figure 16

```
       710        720        730        740        750
GTTTACTAGTGCCATTTGTTCAGTGGTTCGTAGGGCTTTCCCCCACTGTT

       760        770        780        790        800
TGGTTTTCAGTTATGTGGATGATGTGGTATTGGGGGCCAAGTCTGCACAA

       810        820        830        840        850
CATCTTGAATCCCTTTTTACCGCTATTACCAATTTTCTTTTGTCTTTGGG

       860        870        880        890        900
TATACATTTAAACCMTAATAAAACCAAACGTTGGGGCTATTCCCTTAACT

       910        920        930        940        950
TTATGGGATATGGAATTGGAAGTTGGGGTCCTGCCCAGGGAAGATGGCAG

GGG
```

Figure 16 continued

Figure 17 Patient E: HBV polymerase

```
         10         20         30         40         50
SSSGHAVELQHIPPSSARSQSEGPILSCWWLQFRNSKPCSDYCLSHIVNL

         60         70         80         90         100
LEDWGPCTEYGEHHIRIPRTPARVTGGVFLVDKNPHNTTESRLVVDFSQF

        110        120        130        140        150
SRGSTRVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMP

        160        170        180        190        200
HLLVGSSGLPRYVARLSSTSRNINYQHGTMQDLHDSCSRNLYVSLLLLYK

        210        220        230        240        250
TFGRKLHLYSHPIILGFRKIPMGVGLSPFLMAQFTSAICSVVRRAFPHCL

        260        270        280        290        300
VFSYVDDVVLGAKSAQHLESLFTAITNFLLSLGIHLNXNKTKRWGYSLNF

MGYGIGSWG
```

Figure 17

Figure 18: Patient E HBsAg

```
        10         20         30         40         50
QPTPISPPLRDSHPQAMQWNSSTFHQALLDPRVRGLYFPAGGSSSGTVNP

        60         70         80         90        100
VPTTASPISSIFSRTGDPAPNMESTTSGFLGPLLVLQAGFFLLTRILTIP

       110        120        130        140        150
QSLDSWWTSLNFLGGAPACPGQNLQSPTSNHSLTSCPPICPGYRWMCLRR

       160        170        180        190        200
FIIFLFILLLCLIFLLVLLDYQGMLPVCPLLPGTSTTSTGPCKTCTTPAQ

       210        220        230        240        250
GTSMFPSCCCTKPSDGNCTCIPIPSSWAFARFLWEWASVRFSWLSLLVPF

       260        270        280        290        300
VQWFVGLSPTVWFSVMWMMWYWGPSLHNILNPFLPLLPIFFCLWVYI*TX

IKPNVGA
```

Figure 18

Figure 19: Patient F: nt sequence

```
        10         20         30         40         50
CCAATCGGCAGTCAGGAAGACAGCCTACTCCCATCTCTCCACCTCTAAGA

        60         70         80         90        100
GACAGTCATCCTCAGGCCATGCAGTGGAACTCCAGCACATTCCACCAAGC

       110        120        130        140        150
TCTGCTAGATCCCAGAGTGAGGGGCCTATACTTTCCTGCTGGTGGCTCCA

       160        170        180        190        200
GTTCCGGAACAGTAAACCCTGTTCCGACTACTGCCTCTCCCATATCGTCA

       210        220        230        240        250
ATCTTCTCGAGGACTGGGGACCCTGCACCGAATATGGAGAGCACCACATC

       260        270        280        290        300
AGGATTCCTAGGACCCCTGCTCGTGTTACAGGCGGGGTTTTTCTTGTTGA

       310        320        330        340        350
CAAGAATCCTCACAATACCACAGAGTCTAGACTCGTGGTGGACTTCTCTC

       360        370        380        390        400
AATTTTCTAGGGGGAGCACCCACGTGTCCTGGCCAAAATTTGCAGTCCCC

       410        420        430        440        450
AACCTCCAATCACTCACCAACCTCTTGTCCTCCAATTTGTCCTGGTTATC

       460        470        480        490        500
GCTGGATGTGTCTGCGGCGTTTTATCATCTTCCTCTTCATCCTGCTGCTA

       510        520        530        540        550
TGCCTCATCTTCTTGTTGGTTCTTCTGGACTACCAAGGTATGTTGCCCGT

       560        570        580        590        600
TTGTCCTCTACTTCCAGGAACATCAACTACCAGCACGGGACCATGCAAGA

       610        620        630        640        650
CCTGCACGACTCCTGCTCAAGGAACCTCTATGTTTCCCTCTTGTTGCTGT
```

Figure 19

```
       660        670        680        690        700
ACAAAACCTTCGGACGGAAATTGCACTTGTATTCCCATCCCATCATCTTG

       710        720        730        740        750
GGCTTTCGCAAGATTCCTATGGGAGTGGGCCTCAGTCCGTTTCTCCTGGC

       760        770        780        790        800
TCAGTTTACTAGTGCCATTTGTTCAGTGGTTCGTAGGGCTTTCCCCCACT

       810        820        830        840        850
GTTTGGCTTTCAGTTATATGGATGATGTGGTATTGGGGGCCAAGTCTGTA

       860        870        880        890        900
CAACATCTTGAATCCCTTTTTACCGCTGTTACCAATTTTCTTTTGTCTTT

       910        920        930        940        950
GGGTATACATTTAAACCCTACTAAAACTAAACGTTGGGGCTACTCCCTTA

       960        970        980
ACTTCATGGGATATGTAATTGGAAGTTGGGGTACCTTG
```

Figure 19 continued

Figure 20 Patient F Pol Amino acid sequence

```
          10        20        30        40        50
EDWGPCTEYGEHHIRIPRTPARVTGGVFLVDKNPHNTTESRLVVDFSQFS

          60        70        80        90        100
RGSTHVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPH

         110       120       130       140       150
LLVGSSGLPRYVARLSSTSRNINYQHGTMQDLHDSCSRNLYVSLLLLYKT

         160       170       180       190       200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLLAQFTSAICSVVRRAFPHCLA

         210       220       230       240       250
FSYMDDVVLGAKSVQHLESLFTAVTNFLLSLGIHLNPTKTKRWGYSLNFM

GYVIGSWG
```

Figure 20

Figure 21 Patient F HBsAg seq

```
          10         20         30         40         50
MESTTSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGAPTCPG

          60         70         80         90        100
QNLQSPTSNHSPTSCPPICPGYRWMCLRRFIIFLFILLLCLIFLLVLLDY

         110        120        130        140        150
QGMLPVCPLLPGTSTTSTGPCKTCTTPAQGTSMFPSCCCTKPSDGNCTCI

         160        170        180        190        200
PIPSSWAFARFLWEWASVRFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWY

         210        220
WGPSLYNILNPFLPLLPIFFCLWVYI
```

Figure 21

Figure 22: Patient G ;HBV nt

```
         10         20         30         40         50
TCCGCCTCCTGCCTCCACCAATCGCCAGTCAGGAAGGCAACCTACCCCGC

         60         70         80         90        100
TCTCTCCACCTTTGAGAGACACTCATCCTCAGGCCGTGCAGTGGAACTCC

        110        120        130        140        150
ACAACCTTCCACCAAACTCTGCAAGATCCCAGAGTGAGGGGCCTGTATCT

        160        170        180        190        200
CCCTGCTGGTGGCTCCAGTTCAGGAACAGCAAACCCTGTTCCGACTACTG

        210        220        230        240        250
CCTCTCGCTTATCGTCAATCTTCTCGAGGATTGGGGACCCTGCGCTGAAC

        260        270        280        290        300
ATGGAGAACATCACATCAGGACTCCTAGGACCCCTTCTCGTGTTACAGGC

        310        320        330        340        350
GGGGTTTTTCTTGTTGACAAGAATCCTCACAATACCGCAGAGTCTAGACT

        360        370        380        390        400
CGTGGTGGACTTCTCTCAGTTTTCTAGGGGGAACTACCGTGTGTCTTGGC

        410        420        430        440        450
CAAAATTCGCGGTCCCCAACCTCCAATCACTCACCAACCTCCTGTCCTCC

        460        470        480        490        500
GACTTGTCCTGGTTATCGCTGGATGTATCTGCGGCGTTTTATCATATTCC

        510        520        530        540        550
TCTTCATCCTGCTGCTATGCCTCATCTTCTTGTTGGTTCTTCTGGACTAT

        560        570        580        590        600
CAAGGTATGTTGCCCGTTTGTCCTCTAATTCCAGGATCCTCAACCACCAG

        610        620        630        640        650
CACGGGAACATGCCGAACCTGCACGACTCCTGCTCAAGGAACCTCTATGT

        660        670        680        690        700
ATCCCTCCTGTTGCTGTACCAAACCTTCGGACGGAAATTGCACCTGTATT
```

Figure 22

```
       710        720        730        740        750
CCCATCCCATCATCTTGGGCTTTCGGAAAATTCCTATGGGAGTGGGCCTC

       760        770        780        790        800
AGCCCGTTTCTCCTGGCTCAGTTTACTAGTGCCATTTGTTCAGTGGTTCG

       810        820        830        840        850
TAGGGCTTTCCCCCACTGTTTGGCTTTCAGTTATATGGATGATGTGGTAT

       860        870        880        890        900
TGGGGGCCAAGTCTGTACAGCATCTTGAGTCCCTTTTTACCGCTGTTACC

       910        920        930        940        950
AATTTTCTTTTGTCTTTGGGTATACATTTAACCCCTAACAAAACAAAGAG

       960        970        980        990       1000
ATGGGGTTACTCTCTAAATTTTATGGGCTATGTCATTGGAAGTTATGGGT

      1010       1020       1030       1040
CCTTGCCACAAGAACACATTATACTAAAAATCAAAGATTGTTT
```

Figure 22 continued

Figure 23 Patient G HBV POL

```
        10         20         30         40         50
EDWGPCAEHGEHHIRTPRTPSRVTGGVFLVDKNPHNTAESRLVVDFSQFS

        60         70         80         90        100
RGNYRVSWPKFAVPNLQSLTNLLSSDLSWLSLDVSAAFYHIPLHPAAMPH

       110        120        130        140        150
LLVGSSGLSRYVARLSSNSRILNHQHGNMPNLHDSCSRNLYVSLLLLYQT

       160        170        180        190        200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLLAQFTSAICSVVRRAFPHCLA

       210        220        230        240        250
FSYMDDVVLGAKSVQHLESLFTAVTNFLLSLGIHLTPNKTKRWGYSLNFM

GYVIGSYG
```

Figure 23

Figure 24: Patient G HbsAg

```
         10         20         30         40         50
MENITSGLLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLSFLGGTTVCLG

         60         70         80         90        100
QNSRSPTSNHSPTSCPPTCPGYRWMYLRRFIIFLFILLLCLIFLLVLLDY

        110        120        130        140        150
QGMLPVCPLIPGSSTTSTGTCRTCTTPAQGTSMYPSCCCTKPSDGNCTCI

        160        170        180        190        200
PIPSSWAFGKFLWEWASARFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWY

        210        220
WGPSLYSILSPFLPLLPIFFCLWVYI
```

Figure 24

Figure 25 Patient H nt seq

```
        10         20         30         40         50
CGCCTCCTGCCTCCACCAATCGCCAGTCAGGAAGGCAGCCGACCCCACTG

        60         70         80         90        100
TCTCCACCTTTGAGAGACACTCATCCTCAGGCCGTGCAGTGGAACTCCAC

       110        120        130        140        150
AACCTTCCACCAAACTCTGCAAGATCCCAGAGTGAGAGGCCTGTATTTCC

       160        170        180        190        200
CTGCTGGTGGCTCCAGTTCAGGAACAGTAAACCCTGTTCCGACCACTGCC

       210        220        230        240        250
TCTCCCTTATCGTCAATCTTCTCGAGGATTGGGGACCCTGCGCTGAACAT

       260        270        280        290        300
GGAGAACATCACATCAGGATTCCTAGGACCCCTTCTCGTGTTACAGGCGG

       310        320        330        340        350
GGTTTTTCTTGTTGACAAGAATCCTCACAATACCGCAGAGTCTAGACTCG

       360        370        380        390        400
TGGTGGACTTCTCTCAGTTTTCTAGGGGAAACCACCGTGTGTCTTGGCCA

       410        420        430        440        450
AAATTCGCAGTCCCCAACCTCCAATCACTCACCAACCTCCTGTCCTCCAA

       460        470        480        490        500
CTTGTCCTGGTTATCGCTGGATGTGTCTGCGGCGTTTTATCATATTCCTC

       510        520        530        540        550
TTCATCCTGCTGCTATGCCTCATCTTCTTGTTGGTTCTTCTGGACTATCA

       560        570        580        590        600
AGGTATGTTGCCCGTTTGTCCTCTAATTCCAGGATCCTCAACCACCAGCA

       610        620        630        640        650
CGGGACCATGCCGAACCTGCACGACTCCTGCTCAAGGAACCTCTATGTAT

       660        670        680        690        700
CCCTCCTGTTGCTGTACCAAACCTTCGGACGGAAATTGCACCTGTATTCC
```

Figure 25

```
        710        720        730        740        750
CATCCCATCATCTTGGGCTTTCGCAAAATTCCTATGGGAGTGGGGCTCAG

        760        770        780        790        800
CCCGTTTCTCATGGCTCAGTTTACTAGTGCCATTTGTTCAGTGGTTCGTA

        810        820        830        840        850
GGGCTTTCCCCCACTGTTTGGCTTTCAGTTATGTGGATGATGTGGTATTG

        860        870        880        890        900
GGGGCCAAGTCTGTATCGCATCTTGAGTCCCTTTTTACCGCTGTTACCAA

        910        920        930        940        950
TTTTCTTTTGTCTTTGGGTATACATTTAAACCCTAACAAAACGAAAAGAT

        960        970        980        990       1000
GGGGTTACTCTTTAAATTTTATGGGGTATGTTATTGGATGTTATGGGTCC

       1010       1020
TTGCCACAAGAACACATCGTACAAAAA
```

Figure 25 continued

Figure 26: Patient H HBV pol

```
         10         20         30         40         50
EDWGPCAEHGEHHIRIPRTPSRVTGGVFLVDKNPHNTAESRLVVDFSQFS

         60         70         80         90        100
RGNHRVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHIPLHPAAMPH

        110        120        130        140        150
LLVGSSGLSRYVARLSSNSRILNHQHGTMPNLHDSCSRNLYVSLLLLYQT

        160        170        180        190        200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLMAQFTSAICSVVRRAFPHCLA

        210        220        230        240        250
FSYVDDVVLGAKSVSHLESLFTAVTNFLLSLGIHLNPNKTKRWGYSLNFM

        260
GYVIGCYGSLPQEH
```

Figure 26

Figure 27: Patient H HBsAg

```
         10         20         30         40         50
MENITSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLSFLGETTVCLG

         60         70         80         90        100
QNSQSPTSNHSPTSCPPTCPGYRWMCLRRFIIFLFILLLCLIFLLVLLDY

        110        120        130        140        150
QGMLPVCPLIPGSSTTSTGPCRTCTTPAQGTSMYPSCCCTKPSDGNCTCI

        160        170        180        190        200
PIPSSWAFAKFLWEWGSARFSWLSLLVPFVQWFVGLSPTVWLSVMWMMWY

        210        220
WGPSLYRILSPFLPLLPIFFCLWVYI
```

Figure 27

Figure 28 Patient I HBV nt seq

```
        10         20         30         40         50
CAACTTGTCCTGGTTATCGCTGGATGTGTCTGCGGCGTTTTATCATATTC

        60         70         80         90        100
CTCTTCATCCTGCTGCTATGCCTCATCTTCTTGTTGGTTCTTCTGGACTA

       110        120        130        140        150
TCGAGGTATGTTGCCCGTTTGTCCTCTACTTCCAGGATCTTCAACCACCA

       160        170        180        190        200
GCACGGGTCCATGCAGAACCTGCACGACTCCTGCTCAAGGAACCTCTATG

       210        220        230        240        250
TATCCCTCATGTTGCTGTACCAAACCTTCGGACGGAAATTGCACCTGTAT

       260        270        280        290        300
TCCCATCCCATCATCCTGGGCTTTCGGAAAATTCCTATGGGAGTGGGCCT

       310        320        330        340        350
CAGCCCGTTTCTCATGGCTCAGTTTACTAGTGCCATTTGTTCAGTGGTTC

       360        370        380        390        400
GTAGGGCTTTCCCCCATTGTTTGGCTTTCAGTTATGTGGATGATGTGGTA

       410        420        430        440        450
TTGGGGGCCAAGTCTGTATCGCATCTTGAGTCCCTTTTTACCGCTGTTAC

       460        470        480        490        500
CAATTTTCTTTTGTCTCTGGGTATACATTTAAACCCTCACAAAACAAAAA

       510        520        530        540        550
GATGGGGTTACTCTTTACATTTCATGGGCTATGTCATCGGATGTTATGGG

       560
TCTTTGCCAC
```

Figure 28

Figure 29 Patient I HBV pol

```
         10        20        30        40        50
NLSWLSLDVSAAFYHIPLHPAAMPHLLVGSSGLSRYVARLSSTSRIFNHQ

         60        70        80        90        100
HGSMQNLHDSCSRNLYVSLMLLYQTFGRKLHLYSHPIILGFRKIPMGVGL

        110       120       130       140       150
SPFLMAQFTSAICSVVRRAFPHCLAFSYVDDVVLGAKSVSHLESLFTAVT

        160       170       180
NFLLSLGIHLNPHKTKRWGYSLHFMGYVIGCYGSLP
```

Figure 29

Figure 30 Patient I: HBsAg

```
        10         20         30         40         50
TCPGYRWMCLRRFIIFLFILLLCLIFLLVLLDYRGMLPVCPLLPGSSTTS

        60         70         80         90        100
TGPCRTCTTPAQGTSMYPSCCCTKPSDGNCTCIPIPSSWAFGKFLWEWAS

       110        120        130        140        150
ARFSWLSLLVPFVQWFVGLSPIVWLSVMWMMWYWGPSLYRILSPFLPLLP

       160        170        180
IFFCLWVYI*
```

Figure 30

Figure 31 Patient J HBV nt seq

```
         10         20         30         40         50
CGCCTCCTCCTGCCTCCACCATCGGCAGTCAGGAAGAAAGCCTACTCCCA

         60         70         80         90        100
TCTCTCCACCTCTAAGAGACAGTCATCCTCAGGCCATGCAGTGGAACTCC

        110        120        130        140        150
AGCACATTCCACCAAGCTCTGCTAGATCCCARAGTGAGRGGCCTATACTT

        160        170        180        190        200
TCCTGCTGGTGGCTCCAGTTCCGGAACAGTAAACCCTGTTCCGACTACTG

        210        220        230        240        250
CCTCTCCCATATCGTCAATCTTCTCGAGGACTGGGGACCCTGCACCGAAT

        260        270        280        290        300
ATGGAGAGCACAACATCAGGATTCCTAGGACCCCTGCTCGTGTTACAGGC

        310        320        330        340        350
GGGGTTTTTCTTGTTGACAAGAATCCTCACAATACCACAGAGTCTAGACT

        360        370        380        390        400
CGTGGTGGACTTCTCTCAATTTTCTAGGGGGAGCACCCACGTGTCCTGGC

        410        420        430        440        450
CAAAATTTGCAGTCCCCAACCTCCAATCACTCACCAACCTCTTGTCCTCC

        460        470        480        490        500
AATTTGTCCTGGTTATCGCTGGATGTGTCTGCGGCGTTTTATCATCTTCC

        510        520        530        540        550
TCTTCATCCTGCTGCTATGCCTCATCTTCTTGTKGGTTCTTCTGGACTAC

        560        570        580        590        600
CAAGGTATGTTGCCCGTTTGTCCTCTACTTCCAGGAACATCAACTACCAG

        610        620        630        640        650
CACGGGACCATGCAAGACCTGCACGATTCCTGCTCAAGGAACCTCTATGT

        660        670        680        690        700
TTCCCTCTTGTTGCTGTACAAAACCTTCGGACGGAAATTGCACTTGTATT
```

Figure 31

```
       710        720        730        740        750
CCCATCCCATCATCTTGGGCTTTCGCAAGATTCCTATGGGAGTGGGCCTC

       760        770        780        790        800
AGTCCGTTTCTCCTGGCTCAGTTTACTAGTGCCATTTGTTCAGTGGTTCG

       810        820        830        840        850
TAGGGCTTTCCCCCACTGTTTGGCTTTCAGTTATATGGATGATGTGGTAT

       860        870        880        890        900
TGGGGGCCAAGTCTGTACAACATCTTGAATCCCTTTTTACCGCTGTTACC

       910        920        930        940        950
AATTTTCTTTTGTCTTTGGGTATACATTTAAACCCTACTAAAACTAAACG

       960        970        980        990       1000
TTGGGGCTACTCCCTTAACTTCATGGGATATGTAATTGGAAGTTGGGGTA

      1010       1020
CCTTACCACAGGAACATATTGTACACAAA
```

Figure 31 continued

Figure 32 Patient J HBV pol

```
        10         20         30         40         50
EDWGPCTEYGEHNIRIPRTPARVTGGVFLVDKNPHNTTESRLVVDFSQFS

        60         70         80         90        100
RGSTHVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPH

       110        120        130        140        150
LLVGSSGLPRYVARLSSTSRNINYQHGTMQDLHDSCSRNLYVSLLLLYKT

       160        170        180        190        200
FGRKLHLYSHPIILGFRKIPMGVGLSPFLLAQFTSAICSVVRRAFPHCLA

       210        220        230        240        250
FSYMDDVVLGAKSVQHLESLFTAVTNFLLSLGIHLNPTKTKRWGYSLNFM

       260
GYVIGSWGTLPQEHIVHK
```

Figure 32

Figure 33. Patient J HBsAg

```
        10         20         30         40         50
MESTTSGFLGPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGAPTCPG

        60         70         80         90        100
QNLQSPTSNHSPTSCPPICPGYRWMCLRRFIIFLFILLLCLIFLXVLLDY

       110        120        130        140        150
QGMLPVCPLLPGTSTTSTGPCKTCTIPAQGTSMFPSCCCTKPSDGNCTCI

       160        170        180        190        200
PIPSSWAFARFLWEWASVRFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWY

       210        220
WGPSLYNILNPFLPLLPIFFCLWVYI
```

Figure 33

Figure 34 Patient K HBV nt

```
        10         20         30         40         50
CTCCTCCTGCCTCCACCAATCGGCAGTCAGGAAGACAGCCTACACCCATC

        60         70         80         90        100
TCTCCACCTCTAAGAGACAGTCATCCTCAGGCCATGCAGTGGAACTCCAG

       110        120        130        140        150
CACATTCCACCAAGCTCTGCTAGATCCCAGAGTGAGGGGCCTATACTTTC

       160        170        180        190        200
CTGCTGGTGGCTCCAGTTCAGGAACAGTAAACCCTGTTCCGACTACTGCC

       210        220        230        240        250
TCTCCCATATCGTCAATCTTCTCGAGGACTGGGGACCCTGCACCGAATAT

       260        270        280        290        300
GGAGAGCACCACATCAGGATTCCTAGGACCCCTGCTCGTGTTACAGGCGG

       310        320        330        340        350
GGTTTTTCTTGTTGACAAGAATCCTCACAATACCACAGAGTCTAGACTCG

       360        370        380        390        400
TGGTGGACTTCTCTCAATTTTCTAGGGGGAGCACCCACGTGTCCTGGCCA

       410        420        430        440        450
AAATTTGCAGTCCCCAACCTCCAATCACTCACCAACCTCTTGTCCTCCAA

       460        470        480        490        500
TTTGTCCTGGTTATCGCTGGATGTGTCTGCGGCGTTTTATCATCTTCCTC

       510        520        530        540        550
TTCATCCTGCTGCTATGCCTCATCTTCTTGTTGGTTCTTCTGGACTACCA

       560        570        580        590        600
AGGTATGTTGCCCGTTTGTCCTCTACTTCCAGGAACATCAACTACCAGCA

       610        620        630        640        650
CGGGACCATGCAAGACCTGCACGATTCCTGCTCAAGGAACCTCTATGTTT

       660        670        680        690        700
CCCTCTTGTTGCTGTACAAAACCTTCGGACGGAAATTGCACTTGTATTCC
```

Figure 34

```
       710        720        730        740        750
CATCCCATCATCTTGGGCTTTCGCAAGATTCCTATGGGAGTGGGCCTCAG

       760        770        780        790        800
TCCGTTTCTCCTGGCTCAGTTTACTAGTGCCATTTGTTCAGTGGTTCGTA

       810        820        830        840        850
GGGCTTTCCCCCACTGTTTGGCTTTCAGTTATATGGATGATGTGGTATTG

       860        870        880        890        900
GGGGCCAAGTCTGTACAACATCTTGAATCCCTTTTTACCGCTGTTACCAA

       910        920        930        940        950
TTTTCTTTTGTCTTTGGGTATACATTTAAACCCTRCTAAAACCAAACGTT

       960        970        980        990       1000
GGGGTTACTCCCTTAACTTCATGGGATATGTAATTGGAAGTTGGGGTACC

      1010       1020       1030
TTACCACAGGAACATATTGTACACAAAATCAAACA
```

Figure 34 continued

Figure 35 Patient K HBV pol

```
        10         20         30         40         50
SSCLHQSAVRKTAYTHLSTSKRQSSSGHAVELQHIPPSSARSQSEGPILS

        60         70         80         90        100
CWWLQFRNSKPCSDYCLSHIVNLLEDWGPCTEYGEHHIRIPRTPARVTGG

       110        120        130        140        150
VFLVDKNPHNTTESRLVVDFSQFSRGSTHVSWPKFAVPNLQSLTNLLSSN

       160        170        180        190        200
LSWLSLDVSAAFYHLPLHPAAMPHLLVGSSGLPRYVARLSSTSRNINYQH

       210        220        230        240        250
GTMQDLHDSCSRNLYVSLLLLYKTFGRKLHLYSHPIILGFRKIPMGVGLS

       260        270        280        290        300
PFLLAQFTSAICSVVRRAFPHCLAFSYMDDVVLGAKSVQHLESLFTAVTN

       310        320        330        340
FLLSLGIHLNPXKTKRWGYSLNFMGYVIGSWGTLPQEHIVHKIK
```

Figure 35

Figure 36 Patient K HbsAg

```
        10         20         30         40         50
PPASTNRQSGRQPTPISPPLRDSHPQAMQWNSSTFHQALLDPRVRGLYFP

        60         70         80         90        100
AGGSSSGTVNPVPTTASPISSIFSRTGDPAPNMESTTSGFLGPLLVLQAG

       110        120        130        140        150
FFLLTRILTIPQSLDSWWTSLNFLGGAPTCPGQNLQSPTSNHSPTSCPPI

       160        170        180        190        200
CPGYRWMCLRRFIIFLFILLLCLIFLLVLLDYQGMLPVCPLLPGTSTTST

       210        220        230        240        250
GPCKTCTIPAQGTSMFPSCCCTKPSDGNCTCIPIPSSWAFARFLWEWASV

       260        270        280        290        300
RFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWYWGPSLYNILNPFLPLLPI

       310        320        330        340
FFCLWVYI*TLLKPNVGVTPLTSWDM*LEVGVPYHRNILYTKSN
```

Figure 36

Figure 37 Patient L HBV nt

```
         10         20         30         40         50
CAGTCCGGAAGGCAGCCTACTCCCTTATCTCCACCTCTAAGGGACACTCA

         60         70         80         90        100
TCCTCAGGCCATGCAGTGGAACTCCACCACTTTCCATCAAACTCTTCAAG

        110        120        130        140        150
ATCCCAGAGTCAGGGCTCTGTACTTTCCTGCTGGTGGCTCCAGTTCAGGA

        160        170        180        190        200
ACAGTGAGCCCTGCTCAGAATACTGCCTCTGCCATATCGTCAACCTTCTC

        210        220        230        240        250
GAAGACTGGGGACCCTGTACCGAACATGGAGAACATCGCATCAGGACTCC

        260        270        280        290        300
TAGGACCCCTGCTCGCGTTACAGGCGGGGTTTTTCTCGTTGACAAAAATC

        310        320        330        340        350
CTCACAATACCACAGAGTCTAGACTCGTGGTGGACTTCTCTCAATTTTCT

        360        370        380        390        400
AGGGGGAACACCCGTGTGTCTTGGCCAAAATTCGCAGTCCCAAATCTCCA

        410        420        430        440        450
GTCACTCACCAACTTGTTGTCCTCCAATTTGTCCTGGTTATCGCTGGATG

        460        470        480        490        500
TGTCTGCGGCGTTTTATCATCTTCCTCTGCATCCTGCTGCTATGCCTCAT

        510        520        530        540        550
CTTCTTGTTGGTTCTTCTGGACTATCAAGGTATGTTGCCCGTTTGTCCTC

        560        570        580        590        600
TAATTCCAGGATCATCAACCACCAGCACCGGACCATGCAGAACCTGCACG

        610        620        630        640        650
ACTCCTGCTCAAGGAACCTCTATGTTTCCCTCATGTTGCTGTACAAAACC
```

Figure 37

```
       660        670        680        690        700
TACGGACGGAAACTGCACCTGTATTCCCATCCCATCATCTTGGGCTTTCG

       710        720        730        740        750
CAAAATACCTATGGGAGTGGGCCTCAGTCCGTTTCTCTTGGCTCAGTTTA

       760        770        780        790        800
CTAGTGCCGTTTGTTCAGTGGTTCGTAGGGCTTTCCCCCACTGTCTGGCT

       810        820        830        840        850
TTCAGTTATATGGATGATGTGGTATTGGGGGCCAAGTCTGTACAACATCT

       860        870        880        890        900
TGAGTCCCTTTATGCCGCTGTTACCAATTTTCTTTTGTCTTTGGGTATAC

       910        920        930        940        950
ATTTAAACCCTCACAAAACAAAAAGATGGGGATATTCCCTTCAATTCATG

       960        970        980
GGATATGTAATTGGGGGTTGGGGCTCCTTG
```

Figure 37 continued

Figure 38. Patient L Pol

```
         10         20         30         40         50
EDWGPCTEHGEHRIRTPRTPARVTGGVFLVDKNPHNTTESRLVVDFSQFS

         60         70         80         90        100
RGNTRVSWPKFAVPNLQSLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPH

        110        120        130        140        150
LLVGSSGLSRYVARLSSNSRIINHQHRTMQNLHDSCSRNLYVSLMLLYKT

        160        170        180        190        200
YGRKLHLYSHPIILGFRKIPMGVGLSPFLLAQFTSAVCSVVRRAFPHCLA

        210        220        230        240        250
FSYMDDVVLGAKSVQHLESLYAAVTNFLLSLGIHLNPHKTKRWGYSLQFM

GYVIGGWG
```

Figure 38

Figure 39 Patient L HBsAg

```
         10         20         30         40         50
MENIASGLLGPLLALQAGFFSLTKILTIPQSLDSWWTSLNFLGGTPVCLG

         60         70         80         90        100
QNSQSQISSHSPTCCPPICPGYRWMCLRRFIIFLCILLLCLIFLLVLLDY

        110        120        130        140        150
QGMLPVCPLIPGSSTTSTGPCRTCTTPAQGTSMFPSCCCTKPTDGNCTCI

        160        170        180        190        200
PIPSSWAFAKYLWEWASVRFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWY

        210        220
WGPSLYNILSPFMPLLPIFFCLWVYI
```

Figure 39

```
        10         20         30         40         50
CCTGCTGGTGGCTCCAGTTCAGGAACAGTAAACCCTGTTCCGACTACTGC

        60         70         80         90        100
CTCTCCCTTATCGTCAATCTTCTCGAGGATTGGGGACCCTGCGCTGAACA

       110        120        130        140        150
TGGAGAACATCACATCAGGATTCCTAGGACCCCTTCTCGTGTTACAGGCG

       160        170        180        190        200
GGGTTTTTCTTGTTGACAAGAATCCTCACAATACCGCAGAGTCTAGACTC

       210        220        230        240        250
GTGGTGGACTTCTCTCAATTTTCGAGGGGGAACTACCGTGTGTCTTGGCC

       260        270        280        290        300
AAAATTCGCAGTCCCCAACCTCCAATCACTCACCAACCTCCTGTCCTCCA

       310        320        330        340        350
ACTTGTCCTGGTTATCGCTGGATGTGTCTGCGGCGTTTTATCATMTTCCT

       360        370        380        390        400
CTTCATCCTGCTGCTATGCCTCATCTTCTTGTTGGTTCTTCTGGACTATC

       410        420        430        440        450
RAGGTATGTTGCCCGTTTGTCCTCTAATTCCAGGATCCTCAWCCACCAGC

       460        470        480        490        500
ACGGGACCATGCCGAACCTGCATGACTACTGCTCAAGGAACCTCTATGTA

       510        520        530        540        550
TCCCTCCTGTTGCTGTACCAAACCTACGGACGGAAATTGCACCTGTATTC

       560        570        580        590        600
CCATCCCATCATCCTGGGCTTTCGGAAAATTCCTATGGGAGTGGGCCTCA

       610        620        630        640        650
GCCCGTTTCTCCTGGCTCAGTTTACTAGTGCCATTTGTTCAGTGGTTCGT

       660        670        680        690        700
AGGGCTTTCCCCCACTGTTTGGCTTTCAGTTATATGGATGATGTGGTATT

       710        720        730        740        750
GGGGGCCAAGTCTGTAYMGCATCTTGAGTCCCTTTTTACCGCTGTTACCA

       760        770        780        790        800
ATTTTCTTTTGTCTTTGGGTATACATTTAAACCCTAACAAAACAAAGAGA

       810        820        830        840        850
TGGGGTTACTCTCTGAATTTTATGGGTTATGTCATTGGAAGTTATGGGTC

       860        870        880        890        900
CTTGCCACAAGAACACATCATACAAAAAATCAAAGAATGTTTTAGAAAAC

T
```

Figure 40

```
        10         20         30         40         50
CWWLQFRNSKPCSDYCLSLIVNLLEDWGPCAEHGEHHIRIPRTPSRVTGG

        60         70         80         90        100
VFLVDKNPHNTAESRLVVDFSQFSRGNYRVSWPKFAVPNLQSLTNLLSSN

       110        120        130        140        150
LSWLSLDVSAAFYHXPLHPAAMPHLLVGSSGLSRYVARLSSNSRILXHQH

       160        170        180        190        200
GTMPNLHDYCSRNLYVSLLLLYQTYGRKLHLYSHPIILGFRKIPMGVGLS

       210        220        230        240        250
PFLLAQFTSAICSVVRRAFPHCLAFSYMDDVVLGAKSVXHLESLFTAVTN

       260        270        280        290
FLLSLGIHLNPNKTKRWGYSLNFMGYVIGSYGSLPQEHIIQKIKECFRK
```

Figure 41

```
        10         20         30         40         50
PAGGSSSGTVNPVPTTASPLSSIFSRIGDPALNMENITSGFLGPLLVLQA

        60         70         80         90        100
GFFLLTRILTIPQSLDSWWTSLNFRGGTTVCLGQNSQSPTSNHSPTSCPP

       110        120        130        140        150
TCPGYRWMCLRRFIIFLFILLLCLIFLLVLLDYXGMLPVCPLIPGSSXTS

       160        170        180        190        200
TGPCRTCMTTAQGTSMYPSCCCTKPTDGNCTCIPIPSSWAFGKFLWEWAS

       210        220        230        240        250
ARFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWYWGPSLYXILSPFLPLLP

       260
IFFCLWVYI*
```

Figure 42

```
        10         20         30         40         50
CTTTCACCAAACTCTGCAAGATCCCCCTGCTGGTGGCTCCAGTTCAGGAA

        60         70         80         90        100
CAGTAAACCCTGTTCCGACTACTGCCTCTCCCTTATCGTCAATCTTCTCG

       110        120        130        140        150
AGGATTGGGGACCCTGCGCGGAACATGGAGAACATCACATCAGGATTCCT

       160        170        180        190        200
AGGACCCCTTCTCGTGTTACAGGCGGGGTTTTTCTTGTTGACAAGAATCC

       210        220        230        240        250
TCACAATACCGCAGAGTCTAGACTCGTGGTGGACTTCTCTCAATTTTCTA

       260        270        280        290        300
GGGGGAACTACCGTGTGTCTTGGCCAAAATTCGCAGTCCCCAACCTCCAA

       310        320        330        340        350
TCACTCACCAACCTCCTGTCCTCCAACTTGTCCTGGTTATCGCTGGATGT

       360        370        380        390        400
GTCTGCGGCGTTTTATCATCTTCCTCTTCATCCTGCTGCTATGCCTCATC

       410        420        430        440        450
TTCTTGTTGGTTCTTCTGGACTATCRAGGTATGTTGCCCGTTTGTCCTCT

       460        470        480        490        500
AATTCCAGGATCCTCAACCACCAGCACGGGACCATGCCGAACCTGCATGA

       510        520        530        540        550
CTACTGCTCAAGGAACCTCTATGTATCCCTCCTGTTGCTGTACCAAACCT

       560        570        580        590        600
ACGGACGGAAATTGCACCTGTATTCCCATCCCATCATCCTGGGCTTTCGG

       610        620        630        640        650
AAAATTCCTATGGGAGTGGGCCTCAGCCCGTTTCTCCTGGCTCAGTTTAC

       660        670        680        690        700
TAGTGCCATTTGTTCAGTGGTTCGTAGGGCTTTCCCCCACTGTTTGGCTT

       710        720        730        740        750
TCAGTTATATGGATGATGTGGTATTGGGGGCCAAGTCTGYACAGCATCTT

       760        770        780        790        800
GAGTCCCTTTTTACCGCGGTGACCAATTTTCTTTTGTCTTTGGGTATACA

       810        820        830        840        850
TTTAAACCCTAACAAAACAAAGAGATGGGGTTACTCTCTGAATTTTATGG

       860        870        880        890        900
GTTATGTCATTGGAAGTTATGGGTCCTTGCCACAAGAACACATCATACAA

       910
AAAATCAAAGAA
```

Figure 43

```
        10         20         30         40         50
LSPNSARSPCWWLQFRNSKPCSDYCLSLIVNLLEDWGPCAEHGEHHIRIP

        60         70         80         90        100
RTPSRVTGGVFLVDKNPHNTAESRLVVDFSQFSRGNYRVSWPKFAVPNLQ

       110        120        130        140        150
SLTNLLSSNLSWLSLDVSAAFYHLPLHPAAMPHLLVGSSGLSRYVARLSS

       160        170        180        190        200
NSRILNHQHGTMPNLHDYCSRNLYVSLLLLYQTYGRKLHLYSHPIILGFR

       210        220        230        240        250
KIPMGVGLSPFLLAQFTSAICSVVRRAFPHCLAFSYMDDVVLGAKSXQHL

       260        270        280        290        300
ESLFTAVTNFLLSLGIHLNPNKTKRWGYSLNFMGYVIGSYGSLPQEHIIQ

KIKE
```

Figure 44

```
        10         20         30         40         50
FHQTLQDPPAGGSSSGTVNPVPTTASPLSSIFSRIGDPARNMENITSGFL

        60         70         80         90        100
GPLLVLQAGFFLLTRILTIPQSLDSWWTSLNFLGGTTVCLGQNSQSPTSN

       110        120        130        140        150
HSPTSCPPTCPGYRWMCLRRFIIFLFILLLCLIFLLVLLDYXGMLPVCPL

       160        170        180        190        200
IPGSSTTSTGPCRTCMTTAQGTSMYPSCCCTKPTDGNCTCIPIPSSWAFG

       210        220        230        240        250
KFLWEWASARFSWLSLLVPFVQWFVGLSPTVWLSVIWMMWYWGPSLXSIL

       260
SPFLPR*PIFFCLWVYI*
```

Figure 45